

Remarks

This is in response to the final Office Action mailed October 17, 2002. Claims 1 and 3 have been canceled, and claims 4, 8, 10, 15, 27, 33, 39, 42 and 44 have been amended. The amendments to the claims are supported in the specification as filed. No new matter has been added. Applicants submit that the amendments do not raise new issues and respectfully request entry of the above amendment.

Objection to the Drawings

Two sheets of corrected drawings are enclosed.

Claim Objections

Claims 8, 9, 10, 27, 33 and 44 are objected to for failing to further limit the subject matter of a previous claim. The claims have been amended as suggested by the Examiner.

Rejections under 35 U.S.C. §112, second paragraph

Claims 1, 3, 15, 18, 23, 27, 33, 42, 43 and 44 are rejected as being indefinite. Claims 1 and 3 have been deleted. Claim 4 has been amended to recite a nucleic acid consisting of SEQ ID NO: 1. Claim 15 has been amended to more clearly recite plants in which the nucleic acid of claim 4 does not naturally occur, but once the nucleic acid of claim 4 is introduced, the plants express an ozone-inducible gene. Considering the amendment to claim 4, claim 23 clearly recites a plant cell in which the nucleic acid of claim 4 does not naturally occur. Claims 27 and 44 have been amended to clarify the nucleic acid sequence of claim 4 is linked to the genes that become inducible, as suggested by the Examiner. Claim 33 has been amended to clarify that the sequence of claim 4 is inserted into genes of plants or plant cells which are not naturally inducible by ozone. Claim 42 has been amended to recite various types of grain. Applicants submit that the claims, as amended, satisfy the requirements of 35 U.S.C. §112, second paragraph. Withdrawal of the rejections is respectfully requested.

Rejections under 35 U.S.C. §112, first paragraph

Claims 1-4, 8-11, 15, 18-21, 23, 27, 33 and 38-44 are rejected as not being enabled by the specification. Independent claim 4 has been amended to delete reference to fragments or variants of SEQ ID No. 1, and to sequences with a certain % homology to SEQ ID NO. 1. Claim 15 has been amended to recite a plant in which the nucleic acid sequence of claim 4 does not naturally occur, but that when such sequence is introduced into the plant, ozone-inducible gene expression occurs. Applicants submit that the claims, as amended, are fully enabled and described in the specification.

Rejections under 35 U.S.C. §102(b)

Claims 1-4, 8-11, 15, 18, 19, 21, 23, 27, 33, 35, 36, 38, 39 and 40 are rejected as being anticipated by Fischer. The Examiner maintains that Fischer teaches vectors containing SEQ ID NO. 1, as well as transgenic tobacco plants containing the vectors. Applicants respectfully traverse the rejection. As discussed in the prior response, the IPER of the corresponding PCT application stated:

"[Fischer] describes shortened forms of the Vst-1 promoter (Page 90, Table 11) which are fused with the GUS gene. However, these forms do not consist specifically of the selected -430 to -270 range but always contain the region downstream from -280 to the beginning of the promoter sequence of the stilbene synthase gene. It can also not be concluded from [Fischer] that the range between -430 and -270 could be responsible for the regulation of ozone. Thus, also homologous fragments derived therefrom with the same function are allowable (Claim No. 4). The same applies to Claim 15-18 and Claim 23, Procedural Claims 24-33, as well as Useability Claims 34-36, which depend therefrom."

Fischer does not disclose the isolated sequence in the region between -430 and -270 of the stilbene synthase gene Vst1. In view of the amendment to independent claim 4, which now recites an isolated nucleic acid sequence consisting of the sequence of SEQ ID NO. 1, Fischer cannot be seen to anticipate the instant claims. Withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 20, 41 and 42 are rejected as obvious over Fischer in view of Logemann et al. or Conkling et al. For the reasons set forth above, Fischer does not teach the nucleic acid sequence

of independent claim 4. Because Logemann et al. and Conkling et al. fail to provide what Fischer lacks, the combination of references also fails to teach or render obvious the invention of claims 20, 41 and 42. Withdrawal of the rejections is respectfully requested.

Conclusion

In view of the amendments and comments presented herein, favorable reconsideration in the form of a Notice of Allowance is respectfully requested.

Respectfully submitted,

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Marked up Version of Claims

In the Claims

Please cancel claims 1 and 3 and amend claims 4, 8, 10, 15, 27, 33, 39, 42 and 44 as follows:

4. (Amended) An isolated nucleic acid [having a sequence identity of at least 40% to a nucleic acid having sequence:

ACTTTCGAG CCCCTGAAAC TGGAAATTAA TACATTTCC ACTTGACTT
TGAAAAGGAG GCAATCCAC GGGAGGGAAAG CTGCTACCAA CCTTCGTAAT
GTTAATGAAA TCAAAGTCAC TCAATGTCCG AATTCAAAC CTCANCAAC
CAATAGCCAA T (consisting of the sequence SEQ ID NO: 1[]),

and which conveys an ozone-inducible gene expression[, or

which is a derivative, or

an allelic variant of the isolated nucleic acid sequence:

ACTTTCGAG CCCCTGAAAC TGGAAATTAA TACATTTCC ACTTGACTT
TGAAAAGGAG GCAATCCAC GGGAGGGAAAG CTGCTACCAA CCTTCGTAAT
GTTAATGAAA TCAAAGTCAC TCAATGTCCG AATTCAAAC CTCANCAAC
CAATAGCCAA T (SEQ ID NO: 1),

which differs from said sequence by naturally occurring or artificially introduced variations and which conveys ozone-inducible gene expression].

8. (Amended) A chimeric nucleic acid molecule comprising the sequence as set forth in [C]claim 4 [or an ozone-inducible fragment thereof].

10. (Amended) A vector comprising the nucleic acid sequence as set forth in [C]claim 4[, or fragments thereof].

15. (Amended) A plant as set forth in [C]claim 11, [wherein] in which said nucleic acid [sequence] does not naturally occur, and [wherein] in which, due to the introduction of the nucleic acid of SEQ ID NO: 1, an ozone-inducible gene expression of a gene is conveyed.

27. (Amended) A method for the production of transgenic plants or plant cells comprising:
introducing into said plant or plant cell a nucleic acid molecule comprising the sequence as set forth in claim 4[, or a fragment thereof,
wherein] in operative linkage to one or several genes, the expression of which is not naturally or not substantially induced by ozone, wherein said genes are ozone inducible, due to the introduction of [the] said nucleic acid molecule.

33. (Amended) A method for producing ozone-inducible characteristics in transgenic plants or plant cells comprising:
inserting a nucleic acid molecule comprising the sequence, as set forth in [C]claim 4[, or at least a fragment thereof,] into genes of said plants or plant cells which are not naturally or not substantially inducible through ozone.

39. (Amended) The transgenic plant or constituent or propagation material of [C]claim 11, wherein the transgenic plant constituent or propagation material is a protoplast, a plant cell, a callus, a seed, a tuber, [.] a cutting, or an offspring.

42. (Amended) A plant as set forth in claim 41, wherein the grain is oat, wheat, rye, barley, rice, millet or corn.

44. (Amended) A method as set forth in [C]claim 27, wherein the one or several genes are [ozone-inducible] reporter genes.